



# Puerto Rico grid modernization technologies

Does Puerto Rico need a grid modernization?

In September 2022, Hurricane Fiona again knocked out 100% of the grid for as long as four weeks in parts of Puerto Rico, highlighting the continuing need for grid modernization on the island.

Can microgrids support a just and inclusive energy transition for Puerto Rico?

Continually evaluating local resilience benefits, such as microgrids, will improve the resilience planning efforts across all time periods. Overall, this can help support a just and inclusive energy transition for Puerto Rico.

How can Puerto Rico improve energy resilience?

DOE's Puerto Rico Grid Recovery and Modernization Team is making remarkable progress in improving local energy resilience. Natural disasters in recent memory have posed significant challenges to Puerto Rico's electrical grid and the more than three million residents it serves.

Will Puerto Rico receive a grid resilience grant?

Grid Resilience Formula Grant: On July 31, 2023, DOE announced that Puerto Rico will receive over \$7.4 million through the Grid Resilience State and Tribal Formula Grants as part of President Biden's Investing in America agenda.

Why is distributed PV deployment important for Puerto Rico?

The study also found that distributed PV deployment is an essential building block towards reaching 100% penetrations and is especially needed to overcome many of the resilience challenges that Puerto Rico's grid could face; scenarios with more rooftop PV enabled much faster recovery than those with more centralized generation.

How can Puerto Rico support a just and inclusive energy transition?

Overall, this can help support a just and inclusive energy transition for Puerto Rico. Developing and expanding job training and education programs could help prepare the Puerto Rico workforce to meet the estimated 25,000 jobs required for the transition to 100% renewables.

Puerto Rico now faces the urgency and criticality of reconstructing its electric grid, modernizing its power generation fleet, and integrating huge amounts of new renewable energy and battery energy storage systems - all essentially at the same time and to comply with the island's energy policy, regulatory requirements, and fiscal plan ...

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What are possible pathways to achieving Puerto Rico's 100% renewable energy target by 2050? Does reaching 100% mean big changes locally--like building new transmission lines? If Puerto Ricans adopt energy technologies like EVs and air-conditioning, how might that change total demand for electricity?

4 ???&#0183; The Grid Deployment Office's (GDO) Puerto Rico Grid Recovery and Modernization Team works across federal government agencies coordinate billions of dollars in federal aid, provide technical assistance to local stakeholders, and support current rebuilding activities. This team, in coordination with the Department's national labs, led the Puerto Rico Grid Resilience ...

Rico Grid Modernization and Recovery Team within GDO; Marisol Bonnet, the Secretary's Advisor on Puerto Rico; and U.S. Secretary of Energy Jennifer Granholm, for their support of this analysis, guidance, and leadership.

redesigns Puerto Rico's electric system to meet the island's future electricity needs. With the goal of helping Puerto Rico transition to 100 percent renewable energy by 2050, as mandated in the Puerto Rico Energy Public Policy Act, the plan also aims to make the grid more resilient and avoid the recurrence of massive

We show how Puerto Rico 's electricity cost and resilience can be improved through the use of specific new technologies: (a) intentional island capable inverters/power converters, (b) a robust power flow solver, (c) an optimal power flow algorithm, (d) model-predictive control (MPC), and (e) interactive MPC. Our accompanying technical report

The Electrical Grid Modernization (GridMod) Plan will rebuild damaged facilities to higher standards, improve quality of life, and increase reliability in energy services. The GridMod Plan will result in a decentralized and flexible grid that will be ...

Supported by the Bipartisan Infrastructure Law and administered by the Grid Deployment Office, this grant will help modernize Puerto Rico's electric grid to reduce impacts of climate-driven extreme weather and natural disasters, improve power sector reliability, and enhance Puerto Rican communities' access to



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